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# iCLASS Contactless Smart Credentials



- ▶ **13.56 MHz read and write contactless smart card technology**
- ▶ **Fast, reliable communications with high data integrity**
- ▶ **Mutual authentication, encrypted data transfer, and 64-bit diversified keys for read and write capabilities**
- ▶ **2K bit or 16K bit configurations**
- ▶ **Thin cards support a magnetic stripe, barcode, artwork, or photograph**
- ▶ **Durable tokens attach to key rings, key chains, or lanyards**
- ▶ **Convenient adhesive tags attach to non-metallic objects**

iCLASS® Credentials use contactless smart card technology to provide enhanced security and a 13.56 MHz read and write platform for increased speed. iCLASS Cards, Tokens, and Adhesive Tags have large amounts of memory to support applications such as access control, biotechnology, network log-on security, cashless vending, time and attendance, and automotive vehicle identification. The credentials are available in 2K bit (256 Bytes) or 16K bit (2K Bytes) configurations.

## **iCLASS Cards**

iCLASS Cards provide contactless smart card technology in a thin, plastic card. It is possible to print custom artwork or photographs directly on the cards.

## **iCLASS Tokens**

iCLASS Tokens provide contactless smart card technology in a durable, molded plastic token. The token is the size of a car key and fits on a key chain, key ring, or lanyard.

## **iCLASS Adhesive Tags**

iCLASS AdhesiveTags provide contactless smart card technology in a coin-sized, disk-shaped transponder. The tags attach to non-metallic objects, creating transition devices to use during the re-badging process. Upgrade from Wiegand, magnetic stripe or barium ferrite technologies and convert existing badges or cards into contactless proximity credentials.

## **Functions**

### **2K bit (256 Bytes) Credential**

- Supports two application areas: one standard access control application area and one application area for user customization
- Meets ISO 15693 standard for contactless communications
- Provides a cost effective way to improve the security of an access control installation

### **16K bit (2K Bytes) Credential**

- Supports sixteen application areas
- Provides multiple, securely-separated files to activate applications and support future growth
- Provides read and write memory to store biometric templates
- Meets ISO 15693 and 14443B for contactless communications

## **Industry Standard Security**

Secure algorithms and industry standard encryption reduce the risk of compromised data or duplicated credentials. The credentials also support sophisticated encryption methods that exceed industry standards. The 64-bit diversified read and write keys protect separated application areas, providing support for complex applications and future expansion.

## Reliable Read Range

The credentials offer a consistent read range that is not affected by body shielding or variable environmental conditions.

### Convenient to Use

The smart cards are thin enough to fit with credit cards in a wallet or purse. The cards can also be worn on a strap as an identification badge. The tokens can be carried in a pocket, a handbag, or clipped on a lanyard.

The credentials are strong, flexible, and resistant to cracking and breaking. The passive, no-battery design allows for an estimated minimum 100,000 reads.

## Options

The cards support external numbering (inkjet or laser engraving), vertical slot punch, and custom text or graphics.

## Installation/Configuration Notes

## Compatibility Information

Systems	<ul style="list-style-type: none"><li>• Building Integration System (BIS)</li><li>• ReadykeyPRO®</li><li>• Readykey®</li></ul>
Control Panels	<ul style="list-style-type: none"><li>• D9412G Control Panel</li><li>• D7412G Control Panel</li></ul>

	Readers								
	ARD-R10	ARD-R40	ARD-RK40	ARD-VSMART	D8223	D8223-P	D8224	D8224-SP	D8225
26-bit Credentials									
ACD-IC2K26-50 iCLASS 2K Wiegand Card	X	X	X						
ACD-IC16K26-50 iCLASS 16K Wiegand Card	X	X	X	X					
ACD-IC16KP26-50 iCLASS 16K Dual Wiegand Card	X	X	X	X	X	X	X	X	X
ACT-IC2K26-10 iCLASS 2K Wiegand Token	X	X	X						
ACT-IC16K26-10 iCLASS 16K Wiegand Token	X	X	X	X					
ACA-IC2K26-10 iCLASS 2K Wiegand Tag	X	X	X						
ACA-IC16K26-10 iCLASS 16K Wiegand Tag	X	X	X	X					
37-bit Credentials									
ACD-IC2K37-50 iCLASS 2K Wiegand Card	X	X	X						
ACD-IC16K37-50 iCLASS 16K Wiegand Card	X	X	X	X					
ACD-IC16KP37-50 iCLASS 16K Dual Wiegand Card	X	X	X	X	X	X	X	X	X
ACT-IC2K37-10 iCLASS 2K Wiegand Token	X	X	X						
ACT-IC16K37-10 iCLASS 16K Wiegand Token	X	X	X	X					
ACA-IC2K37-10 iCLASS 2K Wiegand Tag	X	X	X						
ACA-IC16K37-10 iCLASS 16K Wiegand Tag	X	X	X	X					

26-bit function is supported in all compatible systems.  
37-bit function is supported in ReadykeyPRO systems only.  
Cards can only be punched in the portrait position.

## Technical Specifications

### Specifications for All Credentials

#### Environmental Considerations

Operating Temperature	-40°F to 158°F (-40°C to 70°C)
Operating Humidity	5% to 95% non-condensing

#### Operation

Operating Frequency:	13.56 MHz
Memory Type:	EEPROM, read and write
Multi-application Memory	2K bit (256 Bytes) card, two application areas 16K bit (2K Bytes) card, two or 16 application areas
Write Endurance:	Minimum of 100,000 cycles
Data Retention:	10 years

### Smart Card Specifications

#### Properties

Dimensions :	2.1 in. x 3.375 in. x 0.03 in. (5.40 cm x 8.6 cm x 0.08 cm)
Weight:	0.2 oz (5.7 g)
Construction:	Thin, flexible polyvinyl chloride (PVC) laminate.

#### Operation

Typical Maximum Read Range:	ARD-R10: 2.0 in. to 3.0 in. (5.0 cm to 7.6 cm) ARD-R40: 2.5 in. to 4.5 in. (6.3 cm to 11.4 cm) ARD-RK40: 3.0 in. to 4.0 in. (7.6 cm to 10.1 cm) Read range might vary depending on installation conditions.
RF Interface:	As suggested by ISO/IEC: 15693 read/write 14443B mode - 106 kbps
Transaction Time:	<100 ms typical
Baud Rate:	14443 B2 mode - 212 Kbps 15693 mode - 26 Kbps

### Token Specifications

#### Properties

Dimensions :	1.4 in. x 1.25 in. x 1.5 in. (3.4 cm x 3.2 cm x 3.8 cm)
Weight:	0.2 oz (4.9 g)
Construction:	Ultrasonically welded polycarbonate shell.

#### Operation

Typical Maximum Read Range:	ARD-R10 1.0 in. (2.5 cm) ARD-R40 1.0 in. (2.5 cm) ARD-RK40 1.0 in. to 1.5 in. (2.5 cm to 3.8 cm) Read range varies depending on installation conditions.
RF Interface:	As suggested by ISO/IEC: 14443B read and write (16K only) 15693 read and write
Transaction Time:	<100 ms typical
Baud Rate:	14443B mode - 106 Kbps 15693 read/write - 26 Kbps

## Tag Specifications

### Properties

Diameter:	1.3 in. (3.3 cm)
Thickness:	0.07 in. (0.2 cm)
Weight:	0.04 oz (1.2 g)
Construction:	Lexan

### Operation

Typical Maximum Read Range:	ARD-R10 1.0 in. (2.5 cm) ARD-R40 1.0 in. (2.5 cm) ARD-RK40 1.0 in. to 1.5 in. (2.5 cm to 3.8 cm) Read range might vary depending on installation conditions.
RF Interface:	As suggested by ISO/IEC: 14443B read and write (16K only) 15693 read and write
Transaction Time:	<100 ms typical
Baud Rate:	14443B mode: 106 Kbps 15693 read and write: 26 Kbps

### Trademarks

iCLASS® is a registered trademark of HID Corporation.  
Readykey® and ReadykeyPRO® are registered trademarks of Bosch Security Systems in the United States.

## Ordering Information

<b>iCLASS 2K Wiegand Card (26-bit)</b> A 13.56 MHz contactless smart card programmed to Wiegand 26-bit format. It has two 1 Kb application areas (256 Byte capacity). Each package contains 50 cards.	<b>ACD-IC2K26-50</b>
<b>iCLASS 2K Wiegand Card (37-bit)</b> A 13.56 MHz contactless smart card programmed to Wiegand 37-bit format. It has two 1 Kb application areas (256 Byte capacity). Each package contains 50 cards.	<b>ACD-IC2K37-50</b>
<b>iCLASS 16K Wiegand Card (26-bit)</b> A 13.56 MHz contactless smart card programmed to Wiegand 26-bit format. It has sixteen 1 Kb application areas (2K Byte capacity). Each package contains 50 cards.	<b>ACD-IC16K26-50</b>
<b>iCLASS 16K Wiegand Card (37-bit)</b> A 13.56 MHz contactless smart card programmed to Wiegand 37-bit format. It has sixteen 1 Kb application areas (2K Byte capacity). Each package contains 50 cards.	<b>ACD-IC16K37-50</b>
<b>iCLASS 16K Dual Wiegand Card (26-bit)</b> A contactless smart card programmed to Wiegand 26-bit format. It operates at 125 kHz or 13.56 MHz. It has sixteen 1 Kb application areas (2K Byte capacity). Each package contains 50 cards.	<b>ACD-IC16KP26-50</b>

## Ordering Information

### iCLASS 16K Dual Wiegand Card (37-bit)

**ACD-IC16KP37-50**

A contactless smart card programmed to Wiegand 37-bit format. It operates at 125 kHz or 13.56 MHz. It has sixteen 1 Kb application areas (2K Byte capacity). Each package contains 50 cards.

### iCLASS 2K Wiegand Token (26-bit)

**ACT-IC2K26-10**

A contactless token with smart card technology programmed to Wiegand 26-bit format. It operates at 13.56 MHz. It is 2K (256 Byte) with two application areas. Each package contains ten tokens.

### iCLASS 2K Wiegand Token (37-bit)

**ACT-IC2K37-10**

A contactless token with smart card technology programmed to Wiegand 37-bit format. It operates at 13.56 MHz. It is 2K (256 Byte) with two application areas. Each package contains ten tokens.

### iCLASS 16K Wiegand Token (26-bit)

**ACT-IC16K26-10**

A contactless token with smart card technology programmed to Wiegand 26-bit format. It operates at 13.56 MHz. It is 16K (2K Byte) with 16 application areas. Each package contains ten tokens.

### iCLASS 16K Wiegand Token (37-bit)

**ACT-IC16K37-10**

A contactless token with smart card technology programmed to Wiegand 37-bit format. It operates at 13.56 MHz. It is 16K (2K Byte) with 16 application areas. Each package contains ten tokens.

### iCLASS 2K Wiegand Adhesive Tag (26-bit)

**ACA-IC2K26-10**

A contactless adhesive tag with smart card technology programmed to Wiegand 26-bit format. It operates at 13.56 MHz. It is 2K (256 Byte) with two application areas. Each package contains ten tags.

### iCLASS 2K Wiegand Adhesive Tag (37-bit)

**ACA-IC2K37-10**

A contactless adhesive tag with smart card technology programmed to Wiegand 37-bit format. It operates at 13.56 MHz. It is 2K (256 Byte) with two application areas. Each package contains ten tags.

### iCLASS 16K Wiegand Adhesive Tag (26-bit)

**ACA-IC16K26-10**

A contactless adhesive tag with smart card technology programmed to Wiegand 26-bit format. It operates at 13.56 MHz. It is 16K (2K Byte) with 16 application areas. Each package contains ten tags.

### iCLASS 16K Wiegand Adhesive Tag (37-bit)

**ACA-IC16K37-10**

A contactless adhesive tag with smart card technology programmed to Wiegand 37-bit format. It operates at 13.56 MHz. It is 16K (2K Byte) with 16 application areas. Each package contains ten tags.

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